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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,752	03/13/2005	Gervin Ruegenberg	E-HE-0033	8272
21495 7590 12/19/2006 CORNING CABLE SYSTEMS LLC P O BOX 489 HICKORY, NC 28603			EXAMINER PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/19/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/508,752

Applicant(s)

RUEGENBERG, GERVIN

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-12, 14-17, 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-12, 14-17, 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Applicant's amendment filed 9/25/2006 has been entered. All pending claims have been carefully reconsidered in view of the amendment.

### *Response to Arguments*

Applicant's arguments filed 9/25/2006 have been fully considered but they are not persuasive. The examiner respectfully submits that the currently pending claims are rendered obvious as discussed in the previous office action, and that Hsu et al. (US 5,016,971) in view of Corke et al. (EP 0234325) teach all the claimed limitations, **as they are currently recited** in the present application.

First, on page 6 of the applicant's REMARKS, it is argued that the Hsu reference does not disclose that "the position of the impingement point of the laser beam is moved in the longitudinal direction of the optical fibers." (first paragraph, page 6 of applicant's response filed 9/25/2006). Second, it is argued that the Hsu reference does not disclose the "speed of the movement of the impingement point is changed..." (first paragraph, page 6). Third, it is argued that the Hsu reference does not disclose that the "intensity of the laser beam is modulated in conjunction with the movement..." (first paragraph, page 6).

The examiner respectfully submits that, as discussed in the previous office action, the Hsu reference discloses an optical device with nearly all limitations set forth in the claims, except for the movement of the laser beam (and therefore the impingement point) with varying

Art Unit: 2874

speed. That is, the Hsu reference discloses all the other claim limitations **in the manner that are currently recited in the present application.**

Specifically, claim 11 recites “moving the laser beam... such that a position of the impingement point is... moved in the longitudinal direction...” Similarly, claim 16 recites “...such that a position of an impingement point of the laser beam onto the optical fibers to be spliced is moved... in the longitudinal direction...”

As discussed in the previous office action, the Hsu reference explicitly teaches moving the position of the laser beam as well as the impingement point **relative to the position of the optical fiber** in a longitudinal direction of the optical fiber (column 3 lines 43-45; see also Fig. 3- the fiber positioner has full 3-axis actuator). Since the **position of the laser beam and the impingement point is moved** relative to the position of the optical fiber, it fully discloses the claimed limitations of claim 11 and 16 (i.e. “moving the laser beam... such that a position of the impingement point is... moved in the longitudinal direction...” (claim 11) and “...such that a position of an impingement point of the laser beam onto the optical fibers to be spliced is moved... in the longitudinal direction...” (claim 16)).

Second, the examiner respectfully submits that the applicant is correct in pointing out that the Hsu reference does not explicitly teach changing the speed of the movement of the impingement point. However, the examiner notes that the Hsu reference was NOT used in a claim rejection based on 35 USC 102. Instead, it is used in a claim rejection based on 35 USC 103, AND that the claim limitation regarding the change of speed of the impingement point is rendered obvious in view of Corke et al. as discussed in the previous office action.

Third, the examiner respectfully submits that the Hsu reference DOES disclose “intensity of the laser beam [being] modulated” as claimed in claims 12 or 16; or “output of a laser [being] changed for the modulation of the intensity of the laser beam” as claimed claim 14.

Specifically, the examiner respectfully submits that the Hsu reference explicitly teaches that the **assembly labeled ‘43’ in Fig. 1 is used to control the intensity of the light beam** outputted by the laser element (Column 3, lines 55-62). As such the Hsu reference fully discloses the claimed feature, i.e. the “intensity of the laser beam [being] modulated” as claimed in claims 12 or 16; or “output of a laser [being] changed for the modulation of the intensity of the laser beam” as claimed claim 14.

Further, the applicant argues that Corke et al. does not teach moving a laser beam such that “an impingement point of the laser beam on the optical fibers is moved periodically in the longitudinal direction of the fibers” (paragraph 2, page 6). The applicant also argues “Corke et al also does not teach changing the speed of the movement of the impingement point” (paragraph 2, page 6).

The examiner respectfully submits that, as discussed in the previous office action, the Corke reference discloses the only claimed feature that is missing from the Hsu reference. That is, Corke reference fully discloses the “speed of the movement of the impingement point [being] changed” as claimed in claim 11, or “manipulate[ing] the speed of the movement of the impingement point” as claimed in claim 17.

Art Unit: 2874

More specifically, the Corke reference fully discloses the movement of the impingement point relative to the optical fiber, wherein the speed of the movement is changed, as disclosed in page 6, lines 8-13 of the reference- as pointed out in the previous office action. Since the reason why one of ordinary skill in the art would find such feature desirable (and therefore would be motivated to modify the Hsu device) was clearly stated in the Corke reference, as discussed in the previous office action, all the claimed limitations are rendered obvious in view of Hsu over Corke.

For these reasons, the ground of claim rejection discussed in the previous office action is proper.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-12, 14-17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al (US 5,016,971) in view of Corke et al (EP 0234325).

Hsu discloses an optical device with limitations set forth in the claims, except it does not explicitly teach moving the impingement point with varying frequency (i.e. varying speeds).

Art Unit: 2874

Nevertheless, Hsu discloses: a process comprising: directing a laser beam to an impingement point on the optical fiber (Fig. 1; column 3 lines 18-27); moving the laser beam such that a position of the impingement point is moved in the longitudinal direction of the optical fibers in a predetermined area around a splicing point of the optical fibers (column 3 lines 43-45); wherein the laser has an associated laser control unit in which the intensity of the laser beam is modulated in conjunction with the movement of the optical component (column 3 lines 18-24; column 3 lines 55-62); wherein the laser control unit and a driver unit are connected to a central control unit (Fig. 3).

On the other hand, Corke explicitly teaches steps of moving the impingement point with varying periodicity (therefore, varying speeds) such that the duration of one period of the position of the impingement point is shorter than the thermal time constant of the optical fibers (page 5 line 22- page 6 line 30). Corke teaches that such feature is advantageous and desirable over the prior art because it allows for precise heating and splicing of optical fibers. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Hsu to have steps of moving the impingement point with varying periodicity as taught by Corke.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 2874

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sung H. Pak  
Primary Patent Examiner  
Art Unit 2874